

REMARKS/ARGUMENTS

Claims 1-8 and 9-21 remain in this application. Claims 8, 13-16 and 20-21 have been amended. Claim 9 has been cancelled. The Examiner indicated that Claims 13-16, 20 and 21 contain patentable subject matter and would be allowed if re-written in independent form.

Claims 1-12 and 17-19 stand rejected under 35 USC 103(a) as being unpatentable over Kim et al (US 6,205,279).

With respect to claims Claims 1-4, 8, 9 and 11:

Independent Claims 1 and 8 call for at least one of said pedestals having Δ_{ped} value higher than 0.2% and a width of less than 6 μ m. Furthermore, Claim 8 has been amended to incorporate the subject matter of the original claim 9- i.e. to specify that the “multiple-pedestal region includes 6 or fewer pedestals with Δ_{ped} values higher than 0.2% and the widths of each of these pedestals with Δ_{ped} values higher than 0.2% is less than 5 μ m”

Claims 2-4 and 11 depend from their independent claims 1 or 8 and therefore also incorporate this feature. This feature is not shown in the Kim reference.

The Kim reference discloses a multi-pedestal fiber profile, with the minimum pedestal width of $(17.5\mu\text{m} - 5.2\mu\text{m})/2 = 6.15\mu\text{m}$. In fact, the Kim reference actually teaches away from the Applicants' invention (See col 5, lns 4-13 of the reference) by stating that the required width of the first outer core is 4.4 μ m to 5.2 μ m and the diameter of the second outer core is 17.5 μ m to 23.5 μ m, and that otherwise the zero dispersion wavelength (which should be about 1550nm) is outside the acceptable range of 1540nm to 1560 nm. That is, the reference itself teaches that the minimum acceptable pedestal width is 6.15 μ m (and since the cited reference is directed to a fiber with low dispersion, going outside the required pedestal width ranges would destroy the purpose of the Kim's invention).

Thus, because the cited reference itself teaches away from the applicants' invention, claims 1-4, 8-9 and 11 (as well as claims 5-12 and 17-19) are not unpatentable over the Kim's reference.

Page 3 of the Office Action states “However, the outer radius of the pedestal region of less than 25 μ m; at least one of the pedestals having Δ_{ped} value higher than 0.2%, a width of less than 6 μ m; at least one of the pedestals having Δ_{ped} value lower than 0.2% are considered to be obvious, since the efficiency of the optical transmission is dependant on the size of the pedestal region. Such an element would advantageously provide a highly efficient transmission of optical signal.

Applicants respectfully disagree with this assertion for the following reasons:

The Kim reference does not teach nor suggest that working outside the disclosed range would provide a highly efficient transmission of the optical signal, nor provides a

reason of why it would be so, nor mentions a problem with efficiency of the optical signal. In fact, the reference itself leads one to believe that operating outside the disclosed range is actually disadvantageous. Furthermore, applicants were not trying to solve a problem of inefficient transmission. Applicants' were trying to solve a problem of taper induced loss and their fiber provides the advantage of low taper induced loss. The cited reference is directed to a fiber with low dispersion and silent with regard to how to achieve a low taper induced loss.

The Examiner also provided no explanation of why would operation in the range disclosed by Kim would "advantageously provide highly efficient transmission of the optical signal." Absent such teaching or suggestions, in the cited references themselves, Applicants' invention should be patentable over the cited art.

With respect to claims Claims 5, 7 and 10:

Claims 5, 7 and 10 depend from the independent claims 1 and therefore expressly incorporate the features of claim 1. Therefore, claims 5, 7 and 10 are not obvious over the Kim reference for the same reason that claim 1 is not obvious over this reference.

In addition, claim 5 specifies the " widths of these pedestals is 0.2 μm to 5 μm ", claim 7 specifies that "one of said pedestals has Δ_{ped} value higher than 0.3% and lower than 0.7% " and claim 10 specifies "the widths of each of these pedestals with Δ_{ped} values higher than 0.2% is between 0.2 μm and 4 μm ". None of these features are suggested in the cited reference and the cited reference teaches away from the above mentioned features of claims 5 and 10. Applicants discovered that these features contribute to low taper induced loss, which is not even mentioned by the cited reference. None of the cited art discussed or suggest modification to the Kim device to improve efficiency of optical transmission, and the inefficient transmission is not a disclosed problem in Kim's fibers. That is, absent applicant's teaching, there is no incentive to modify Kim's device as suggested by the examiner.

Accordingly claims 5, 7 and 10 are not obvious over the Kim's reference.

Claims 6 and 12 depend from the independent claims 1and 8, respectively, and therefore expressly incorporate the features of claim 1. Therefore, claims 6 and 12 are not obvious over the Kim reference for the same reason that claim 1 is not obvious over this reference.

With respect to claims Claims 17, 18 and 19:

Claims 17, 18 and 19 depend from the independent claim 8 and therefore expressly incorporate the features of claim 8. Therefore, claims 18 and 19 are not obvious over the Kim reference for the same reason that claim 8 is not obvious over this reference.

Allowable Subject Matter

The Examiner indicated that Claims 13-16, 20 and 21 contain patentable subject matter and would be allowed if re-written in independent form. Accordingly, these claims have been re-written as suggested by the Examiner and are now allowable.

Conclusion

Based upon the above amendments, remarks, and papers of records, applicant believes the pending claims of the above-captioned application are in allowable form and patentable over the prior art of record. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Applicant believes that no extension of time is necessary to make this Reply timely. Should applicant be in error, applicant respectfully requests that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Reply timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension, and for the extra two independent claims to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Please direct any questions or comments to Svetlana Z. Short at 607-974-0412

Respectfully submitted,

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